

REMARKS

Applicants thank Examiner Cooney for the courteous and helpful discussion with Applicants' U.S. representative on September 3, 2008. During the discussion Examiner stated that one of the cited references (Dany) discloses that an inhibitor (i.e., an  $\alpha,\beta$ -unsaturated compound) enables the polyurethane foam to be produced by the Dany process in the absence of burning or discoloration (see column 4, lines 3-6 of Dany). Applicants' representative pointed out that this disclosure of Dany was directed to the effect of the Dany stabilizer (e.g., an  $\alpha,\beta$ -unsaturated compound) on the Dany flame retardant.

Applicants thank the Office for withdrawing the anticipation rejections set forth in the previous office action and further for withdrawing Hall (U.S. 4,670,483) as pertinent prior art.

The Office is now of the opinion that the presently claimed invention is obvious over Dany (U.S. 3,847,843) or Arlt (WO 0066643) in combination with Kreyenschmidt (DE 10050417).

With respect to the rejection of the claims over the combination of Dany with Kreyenschmidt, Applicants draw the Office's attention to Dany's disclosure that the materials which the Office characterizes as "reading on the inhibitors elected by Applicants" (see page 3 of the July 30, 2008 Office Action -- e.g.,  $\alpha,\beta$ -unsaturated compounds) do not affect the formation of polyurethane foams. For example:

The stabilizers of the present invention were used in the production of polyurethane foam plastics. They could not be found to affect the foaming process, in a manner determinable by testing. The expansion time and the non-tack range, which critically determine the commercial production of foam plastics, could not be found to have been changed. Nor could the stabilizer addends of the present invention be found to affect in a manner determinable by testing the physical properties of the final foam plastics, such as compressive or tear strength, elasticity, dimensional stability, unit weight or the open cellular structure of soft foam plastics....

See column 3, lines 62-74 of Dany (emphasis added).

Thus, the cited art discloses that certain “stabilizers”, e.g.,  $\alpha,\beta$ -unsaturated compounds, do not affect polyurethane foaming processes.

Applicants have shown in the present specification that Dany’s characterization of the effect of stabilizers (e.g.,  $\alpha,\beta$ -unsaturated compound) on polyurethane foaming processes is not correct. In fact, the inclusion of an inhibitor (e.g., an  $\alpha,\beta$ -unsaturated compound) material in a polyurethane-foaming reaction substantially affects the foaming process and the resultant foam.

Applicants draw the Office’s attention to Table 1 on page 16 of the specification (see pages 14-15 for the conditions of the reactions). Table 1 of the present specification provides inventive and comparative examples showing the affect obtained when an inhibitor (e.g., an  $\alpha,\beta$ -unsaturated compound) is encapsulated in a wax in comparison to reactions carried out without encapsulating the inhibitor. Comparative Examples 2-4 include 1 part by weight, 2 parts by weight and 1 part by weight, respectively, of an unencapsulated inhibitor (adipic acid, dimethylpropionic acid, and maleic anhydride, respectively). Inventive Examples 1-3 include 2.5 parts by weight, 3.5 parts by weight and 2.5 parts by weight, respectively, of the aforementioned inhibitors encapsulated in wax. It is readily evident from Table 1 that the foaming reaction is dramatically affected when an unencapsulated inhibitor is present. For example, the rise time for the comparative examples is 145 seconds or greater whereas inventive Examples 1-3 have rise times of 90 seconds or less. Likewise, the cream time for the inventive examples is substantially lower (i.e., 14 seconds) in comparison to the comparative examples (i.e., at least 19 seconds). The physical properties of the resultant foam are also dramatically affected. The elongation of the comparative examples varies widely from 94/95 to 75/79 whereas the inventive examples give elongation results having less variance (i.e., 94/95 to 95/73).

The inventive examples may be further contrasted with Comparative Example 1 which was carried out in the absence of any inhibitor.

Applicants' data demonstrates a result that would not be expected in view of the cited art; namely, that the presence of an unencapsulated inhibitor dramatically affects the properties of the foaming reaction and the resulting foam.

The original specification thus shows that the inclusion of an unencapsulated inhibitor in a polyurethane polymerization mixture substantially affects the properties of the foaming process and the resultant foam. This data is contrary to the teaching of the Dany patent which discloses that stabilizers (e.g., an  $\alpha,\beta$ -unsaturated compounds) do not affect polyurethane foaming processes.

Those of ordinary skill in the art reading the disclosure of Dany and Kreyenschmidt would expect that the inclusion of an inhibitor in the polyurethane foaming reaction would not affect the foaming reaction or the resultant foam. Such an expectation follows directly from the above-quoted disclosure of Dany.

The Office asserts that one of skill in the art would encapsulate the stabilizer of Dany for the same reason one would encapsulate a catalyst; namely, the Office asserts such encapsulation would be carried out to inhibit the inhibitor (e.g., an  $\alpha,\beta$ -unsaturated compounds) of the present claims. This doesn't make sense in view of the cited art (Dany) which discloses that a stabilizer (e.g., an  $\alpha,\beta$ -unsaturated compound) does not affect polyurethane foaming to begin with.

By showing that the inclusion of an unencapsulated inhibitor dramatically affects the foaming reaction and resultant foam Applicants have provided factual evidence of an unexpected result thus rebutting the Office's assertion of obviousness. Applicants' showing is commensurate in scope with the art relied on by the Office because Dany generically teaches that stabilizers (e.g., an  $\alpha,\beta$ -unsaturated compounds) are expected not to effect polyurethane

foaming processes. Irrespective of the scope of Dany's teaching, Applicants draw the Office's attention to present Claims 18 and 20 which recited certain  $\alpha,\beta$ -unsaturated compounds.

Applicants submit that those of ordinary skill in the art would have not expected that the inhibitors of the present claims (e.g., an  $\alpha,\beta$ -unsaturated compounds) to have any effect at all on polyurethane foaming processes (e.g., foaming characteristics such as rise time and cream time). In view of the data of Table 1, Applicants submit that the rejection of the claims over the combination of Dany and Kreyenschmidt should be withdrawn because (i) Applicants have provided data showing that the claimed invention provides an unexpected result, and because (ii) those of skill in the art would not be motivated to encapsulate the stabilizers of Dany as allegedly described in Kreyenschmidt in view of Dany's disclosure that the stabilizer does not affect foaming.

Applicants submit similar logic applies for the rejection of the claims over the combination of Arlt and Kreyenschmidt. The evidence of record, including Dany, teaches those of ordinary skill in the art to expect that the inclusion of an unencapsulated inhibitor does not affect the foaming reaction or the resultant foam in a polyurethane polymerization process. Why would one of skill in the art want to encapsulate an inhibitor when Dany discloses that such compounds do not affect the polyurethane foaming reaction?

The rejection of the claims as obvious over the combination of Arlt and Kreyenschmidt should therefore be withdrawn.

The rejections are further not supportable for other reasons. Applicants pointed out in the Amendment filed in the present application on April 30, 2008 that the encapsulating of Kreyenschmidt is substantially different from the encapsulating of the presently claimed invention. As admitted by the Office, Kreyenschmidt discloses encapsulating a catalyst. The Office refers to the catalyst of Kreyenschmidt as an "active agent".

Applicants submit that the catalyst of Kreyenschmidt is substantially different in function and effect in comparison to the inhibitor of the present claims. According to the English Abstract corresponding with Kreyenschmidt, catalysts are encapsulated to inhibit corrosion of processing machines. Importantly, the compound the Office refers to as an active agent is one that has its effect during the reacting that forms a polyurethane resin. The inhibitor of the present claims functions subsequent to the reacting and inhibits decomposition of the polyurethane resin due to aging (see pages 1 and 2 of the present specification).

Kreyenschmidt discloses an encapsulation technique for affecting a reaction. Kreyenschmidt does not disclose or suggest that encapsulation is an effective means for modifying or affecting polyurethane properties subsequent to a reaction.

According to Dany, those of ordinary skill in the art would have no reason to believe that an inhibitor would affect a polyurethane foaming process. Thus, those of ordinary skill in the art would have no motivation to modify either of Dany or Arlt in the manner suggested by the Office.

Applicants submit that the data of the original specification effectively rebut the Office's assertion of obviousness. First, the evidence of record shows that those of ordinary skill in the art would not be motivated to make the modification asserted to be obvious by the Office because no benefit would be derived therefrom (e.g., according to Dany the inclusion of an inhibitor would not affect the reaction). Further, those of ordinary skill in the art would have no reason to expect any different or improved performance that would derive from encapsulating an inhibitor as presently claimed.

Further, as pointed out in the Amendment filed in the present case on April 30, 2008, it would make no sense to modify the cited art in the manner suggested by the Office because to do so is contradictory to the purpose of the prior art processes. For example,

Kreyenschmidt encapsulates a catalyst for the purpose of inhibiting the catalyst (see the Office's comments on pages 3-5 of the July 30<sup>th</sup> Office Action). Applicants submit that it is readily evident to those of ordinary skill in the art that inhibiting a catalyst leads to effects such as a slower and/or less intense reaction. In contrast, inhibiting an inhibitor, a concept which on its face is ridiculous, provides exactly the opposite result. For example, inhibiting an inhibitor would lead to a faster reaction; namely, faster decomposition of a polyurethane foam. The rejection therefore makes no sense because (i) the function and affect of an encapsulant on a catalyst and an inhibitor are contradictory and (ii) the result of such encapsulation would be undesirable; namely, it would accelerate decomposition of the polyurethane foam.

For the reasons discussed above in detail, Applicants submit the rejection of the claims over the art relied on by the Office is not supportable and should be withdrawn.

On page 2 of the July 30 Office Action the Office states the following:

Applicants' disclosure in the specification giving specific meaning to the inhibitors of the invention is acknowledged (see page 1, lines 12-16). However, it is seen to be of little or no meaning in limiting the inhibitors of the claims in any patentable because the language of the specification is merely stating the affects that the inhibitors are "intended" to impart rather than actually imparting the stated effects.

The purpose of the Office's statement is unclear. It appears that the Office confuses what one of ordinary skill in the art would understand from the disclosure of the present specification with "intended use" limitations in claims. It is irrefutable that page 1 of the specification provides an explicit definition of the inhibitors of the invention. Applicants submit that the disclosure on page 1, lines 12-16 of the specification clearly sets forth the functionality and affect of the inhibitors of the present claims. Whether page 1 uses the word "intended" does not change this conclusion.

OFFICE'S BURDEN RE: ENGLISH TRANSLATIONS

The Office relies on two foreign language documents in the Office Action of July 30 (i.e., Kreyenschmidt and Arlt). The Office cites to “the entire document” of both of the foreign language documents. However, in contradiction to U.S. PTO administrative procedure, the Office failed to provide an English translation of the entire document of Kreyenschmidt and/or Arlt. When the Office relies on a foreign language document to support a rejection, it is the Office’s burden to provide an English translation of the entire document. Applicants previously brought the Board’s decision in *Ex parte Bonfils* to the Office’s attention (see the Amendment filed on March 27, 2007). The Office has still not provided English translations of the entire documents of Kreyenschmidt and Arlt even though the Office relied on the entire documents for each reference in support of the rejection.

The Office’s relies on foreign language documents in support of the rejection is contrary to Office Administrative Procedure.

The Office is requested to either withdraw the rejections or provide full English translations of the foreign language documents relied on in the July 30, 2008 Office Action.

Respectfully submitted,

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